

Work Order ID 80932

Monday, March 05, 2012 12:57:01 PM

80932

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Item ID: D6104-003 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Round Billet, 17-4
Start Date: 3/5/2012 Start Qty: 10.00 ***10*** Cust Item ID:
Required Date: 3/12/2012 Req'd Qty: 10.00 ***10*** Customer:
Reference:

Approvals: Process Plan: Date: 12-03-5 Tooling: Date: Run Start ***NR1***
QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D6104	Rev B								

100 PURCHASING 0.00

100

Purchasing

Purchasing

Memo

0.00

Issue P/O 11358 a) Description: S.S round billet b) Ø3.25" x 3.80" long c) Tolerance on all dimensions are +0.030"/-0.000" d) Material: 17-4PH Stainless steel (Ams 5643 or Aisi 630) e) One blank makes 2 parts f) Material certification required

12-03-6

110

Receive & Inspect for Damage & Mat'l Certs 0.00

110

Packaging

Packaging

Memo

0.00

Ensure material certification is attached

12/3/13 (10)

120

QC6- Inspect dimensions to drawing 0.00

120

QC

Quality Control

Memo

0.00

Ensure Material certification comply to Dwg D6104

12/3/13 (10)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Identify as per dwg & Stock Location: <u>CNC</u>	0.00							
130									
Packaging	Memo	0.00		SL	12/3/13	10			
Packaging									
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.00							
Quality Control									

12/3/14

12-03-14

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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D6104-003

Required Date: 3/12/2012

Required Qty: 10.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6104-003P		Purchased	No			110	Each	0.0000	1	10			
D6104-003P									**				
17-4 SS Roundbar 3.25"OD													

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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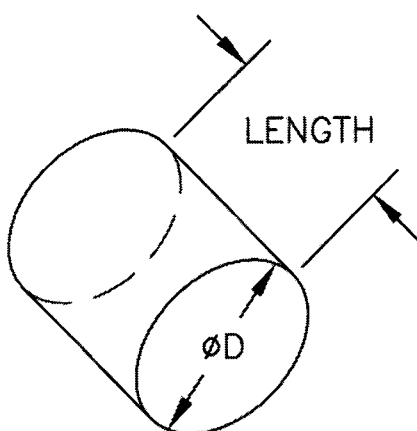


DESIGN RT	DRAWN BY 	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED 	APPROVED 	DRAWING NO. D6104	Rev. B SHEET 1 OF 1
DATE 02.11.25		TITLE ROUND BILLET, 17-4	SCALE NTS
A	01.04.10	NEW ISSUE	
B	02.11.25	CLARIFY ALLOY SPEC ADDED D6104-009/-011 REDUCE LENGTH OF BILLETS	

RELEASED

02.11.29

SPECIFICATION CONTROL DRAWING



MATERIAL: 17-4 PH SS (AMS 5643 OR AISI 630) MIN UTS = 170 KSI (38 HRC)

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, DIAMETER x LENGTH (+0.030/-0.000) AS SHOWN.

TOLERANCE ON ALL DIMENSIONS IS +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES

Part No.	Alloy	D (Diameter)	Length
D6104-001	17-4 PH STAINLESS STEEL	Ø3.00	3.80
D6104-003	17-4 PH STAINLESS STEEL	Ø3.25	3.80
D6104-005	17-4 PH STAINLESS STEEL	Ø4.00	5.10
D6104-007	17-4 PH STAINLESS STEEL	Ø4.50	5.10
D6104-009	17-4 PH STAINLESS STEEL	Ø5.25	4.10
D6104-011	17-4 PH STAINLESS STEEL	Ø6.50	4.10

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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NOTE: Date & initial all entries

**Castle Metals®**

A. M. Castle & Co.

BORDEREAU DE MARCHANDISES

Page 1 of 2

No de Formulaire d'Emballage / Shipment No: 1221743

Expédié de / Ship From: A. M. Castle & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		Vendu à / Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Expédié à / Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Livré à / Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA			
Date d'expédition / Date Shipped 08-MAR-2012		F.O.B. ORIGIN		Modalités de transport / Freight Terms Prepaid		Transporteur / Carrier MANITOULIN		No du Bon de connaissance / BOL No 1221743-2	

Détails d'expédition / Shipment Details				Destination finale / Final Destination Branch - MON			
--	--	--	--	--	--	--	--

N° de commande / Order No	N° de ligne / Line No	N° d'article / Item No	Description
2055776	2	42470.MO	3.2500.RD.17CR-4NI.STAINLESS.RT.SOL TR.COND A.132.0000-156.0000 CUT TO 3.8 IN (+ .0620/- .0000 IN) - BAND SAW CUTTING SPECIFICATIONS: AMS 5643
N° de bon de commande / Purchase Order No 16358		Nbre de pièces / Part Number YOUR ITEM NUMBER: D6104-003	
		Qté commandée / Ordered Qty 10.00 PCS	Qté Facturée / Invoice Qty 10:0000 PCS

Détails / Details							
N° de livraison / Delivery No :	Usine / Mill	No de coulée / Heat Number	Code méc / Mech Id	Pièces / PCS	Largeur (Pouce) / Width (IN)	Longueur (Pouce) / Length (IN)	Qté expédiée / Shipped Qty(LBS)
117437856		246747		10			89.33

Ces marchandises/technologies sont sujettes aux règlements de l'Export Administration et du département d'état des États-Unis. Si elles ont été/sont exportées, elles doivent se conformer à ces règlements. Toute modification du contrat de transport contraire aux lois des États-Unis est interdite.
These commodities/technologies are subject to US Export Administration and US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.

Nous certifions par la présente que le matériel ci-dessus est conforme aux spécifications susmentionnées et aux exigences applicables pour le matériel, y compris toute spécification faisant partie de la description. Les rapports d'essai sont archivés pour fins de consultation. Toute requête concernant du matériel défectueux sera rejetée à moins qu'elle ne soit faite par écrit à A. M. Castle & Co. dans les 60 jours suivant la livraison. Le matériel coupé sur mesure ou coupé par le client ne peut être retourné pour crédit.
We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Ce matériel a été reçu et inspecté par _____ Date: _____ Name: _____

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law prohibited.
Date Printed: 08-MAR-2012 01:28:25 PM



Castle Metals®

A. M. Castle & Co.

BORDEREAU DE MARCHANDISES

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Reviewed by Authorized Castle Metals Representative:				
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VALBRUNA

SLATER STAINLESS, INC.

2400 Taylor Street West, P.O. Box 630
Fort Wayne, Indiana USA 46801
Phone: 260-434-2892 Fax: 260-434-2905

Product Certification Report

Report Number: **4396350**

Certified on Sep 16, 2008 Page 1 of 2

Order I.D. 0801409 001		Order Date 5/19/08		Commodity Code 42470	
Dim 1 3.2500	Dim 2 .0000	Dim 3 .0000	Heat I.D. 246747	Customer I.D. 001117	Customer Purchase Order 10-39981
Product Shape Rounds			Product Surface HR & Rough Turned		Customer Grade 17-4
Length (Inches) 132.000 Min. 156.000 Max.			Bill of Lading # 408533	Weight	

Ship To

**CASTLE METALS
26800 MILES ROAD
BEDFORD HEIGHTS, OH 44146**

Sold To

**VALBRUNA STAINLESS, INC.
2400 TAYLOR STREET WEST
FORT WAYNE, IN 46802**

Lifts: 0027 0028

AISI 630

UNS S17400

AMS 2303E

CONDITION A

ASTMA 564-04

AMS 5643R

3174-10 Rev 4 DTD 08/27/03

ASMESA 564 01 ED 2002 ADD

CHEMICAL ANALYSIS

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	N	Cb	Ta	Cb+Ta
.034	.64	.022	.023	.39	15.70	4.67	.18	3.32	.03	.21	.001	.211
HB												
353												

TENSILE PROPERTIES

CAPABILITY

HB	TS (PSI)	.2%YS (PSI)	%EL(4d)	%RA	AGE(F)
441	203000	176800	16.4	52.9	900

MAGNETIC PARTICLE TEST

FREQ SEV
AVG .13 .11

PRODUCTION HEAT TREATMENT

SOL-ANN(F) SOL-ANN(HR) QUENCH
1900 9.00 Air

MACRO ASTM E340/E381

MACRO

OK

OK

OK

PERCENT FERRITE

% FERRITE

AVG 1.0

Reduction ratio 5 To 1 Min.

Electric Furnace melted; AOD refined.

Ultrasonic test OK.

Chemical testing performed to one or several of the following ASTM methods: E415, E572, E1019, E1085, E1086.

No mercury or low melting alloy contamination. No weld repair.

Material melted in Italy, manufactured in the United States.

Material conforms to listed specifications.

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes, including Federal law, Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info. I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

Dennis Hackett
Dennis Hackett

CASTLE METALS CORP.
DATE RCVD 9/18/08
IAC 1424
APPROVED BY *[Signature]*

**VALBRUNA****SLATER STAINLESS, INC.**2400 Taylor Street West, P.O. Box 630
Fort Wayne, Indiana USA 46801
Phone: 260-434-2892 Fax: 260-434-2905**Product Certification Report****Report Number: 4396350**

Certified on Sep 16, 2008 Page 2 of 2

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Product Shape Rounds			Product Surface HR & Rough Turned		Customer Grade 17-4
Length (Inches) 132.000 Min. 156.000 Max.			Bill of Lading # 408533	Weight	

**Ship
To**CASTLE METALS
26800 MILES ROAD
BEDFORD HEIGHTS, OH 44146**Sold
To**VALBRUNA STAINLESS, INC.
2400 TAYLOR STREET WEST
FORT WAYNE, IN 46802

Quality system is compliant with ISO 9001:2000. Produced in accordance with EN 10204 3.1B.

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